

IN THE CLAIMS:

Please substitute the following claims for the same-numbered claims in the application:

1. (Currently Amended) A computer-implemented method of mining association rules over transactions from datasets while maintaining privacy of individual transactions within said datasets through randomization, said method comprising:

randomizing an original dataset to create a randomized dataset, said randomizing comprising:

randomly dropping true items from each transaction in said original dataset; and

randomly inserting false items into each transaction in said original dataset; ~~and~~

collecting said randomized dataset in a database;

determining support of an association rule in said randomized dataset;

estimating support of said association rule in said original dataset based on said support of said association rule in said randomized dataset; and

outputting said association rule if said support of said association rule in said original data set is estimated to be greater than a predetermined minimum,

wherein, due to said randomizing, privacy breaches of said individual transactions are controlled.

2. (Currently Amended) The method according to claim 1, ~~all the limitations of which are incorporated herein by reference;~~ wherein said randomizing comprises per transaction randomizing, such that randomizing operators are applied to each transaction independently.

3. (Currently Amended) The method according to claim 1, ~~all the limitations of which are incorporated herein by reference;~~ wherein said randomizing is item-invariant such that a reordering of said transactions does not affect outcome probabilities.

4. (Currently Amended) The method according to claim 1, ~~all the limitations of which are incorporated herein by reference~~, wherein said dropping of said true items and said inserting of said false items are carried out to an extent such that the chance of finding a false itemset in a randomized transaction relative to the chance of finding a true itemset in said randomized transaction is above a predetermined threshold.

5. (Currently Amended) The method according to claim 4, ~~all the limitations of which are incorporated herein by reference~~, wherein said predetermined threshold provides that the chance of finding a false itemset in said randomized transaction is approximately equal to the chance of finding a true itemset in said randomized transaction.

6. (Currently Amended) The method according to claim 1, ~~all the limitations of which are incorporated herein by reference~~, wherein said dropping of said true items and said inserting of said false items are performed independently on said transactions prior to said transactions being collected in a database.

7. (Previously Presented) A computer-implemented method of mining association rules from databases while maintaining privacy of individual transactions within said databases through randomization, said method comprising:

randomizing an original dataset to create a randomized dataset, said randomizing comprising:

randomly dropping true items from each transaction in said original dataset;

randomly inserting false items into each transaction in said original dataset;

collecting said randomized dataset in a database;

mining said database to recover an association rule in said original dataset after said dropping and inserting processes, wherein said mining comprising:

determining support for said association rule in said randomized dataset;

estimating support of said association rule in said original dataset based on said support of said association rule in said randomized dataset; and

outputting said association rule if said support of said association rule in said original data set is estimated to be greater than a predetermined minimum,

wherein, due to said randomizing, privacy breaches of said individual transactions are controlled during said mining.

8. (Currently Amended) The method according to claim 7, ~~all the limitations of which are incorporated herein by reference~~, wherein said randomizing comprises per transaction randomizing, such that randomizing operators are applied to each transaction independently.

9. ((Currently Amended) The method according to claim 7, ~~all the limitations of which are incorporated herein by reference~~, wherein said randomizing is item-invariant such that a reordering of said transactions does not affect outcome probabilities.

10. (Currently Amended) The method according to claim 7, ~~all the limitations of which are incorporated herein by reference~~, wherein said dropping of said true items and said inserting of said false items are carried out to an extent such that the chance of finding a false itemset in a randomized transaction relative to the chance of finding a true itemset in said randomized transaction is above a predetermined threshold.

11. (Currently Amended) The method according to claim 7, ~~all the limitations of which are incorporated herein by reference~~, wherein said predetermined threshold provides that the chance of finding a false itemset in said randomized transaction is approximately equal to the chance of finding a true itemset in said randomized transaction.

12. (Currently Amended) The method according to claim 7, ~~all the limitations of which are incorporated herein by reference~~, wherein said dropping and said inserting are performed independently on said transactions prior to said transactions being collected in said database.

13. (Previously Presented) A computer-implemented method of mining association rules from datasets while maintaining privacy of individual transactions within said datasets through randomization, said method comprising:

- creating randomized transactions from an original dataset by:

 - randomly dropping true items from each transaction in said original dataset, and

 - randomly inserting false items into each transaction in said original dataset;

- creating a randomized dataset by collecting said randomized transactions;

- collecting said randomized dataset in a database; and

- mining said database to recover an association rule in said original dataset after said dropping and inserting processes, wherein said mining comprises:

 - determining support for said association rule in said randomized dataset;

 - estimating support of said association rule in said original dataset based on said support for said association rule in said randomized dataset; and

 - outputting said association rule if said support of said association rule in said original data set is estimated to be greater than a predetermined minimum,

 - wherein, due to said creating of said randomized transactions, privacy breaches of said individual transactions are controlled during said mining.

14. (Currently Amended) The method according to claim 12, ~~all the limitations of which are incorporated herein by reference,~~ wherein said process of creating randomized transactions comprises per transaction randomizing, such that randomizing operators are applied to each transaction independently.

15. ((Currently Amended) The method according to claim 13, ~~all the limitations of which are incorporated herein by reference,~~ wherein said process of creating randomized transactions is item-invariant such that a reordering of said transactions does not affect outcome probabilities.

16. (Currently Amended) The method in claim 13, ~~all the limitations of which are incorporated herein by reference,~~ wherein said dropping of said true items and said inserting of

said false items are carried out to an extent such that the chance of finding a false itemset in a randomized transaction relative to the chance of finding a true itemset in said randomized transaction is above a predetermined threshold.

17. (Currently Amended) The method according to claim 16, ~~all the limitations of which are incorporated herein by reference~~, wherein said predetermined threshold provides that the chance of finding a false itemset in said randomized transaction is approximately equal to the chance of finding a true itemset in said randomized transaction.

18. (Currently Amended) The method according to claim 13, ~~all the limitations of which are incorporated herein by reference~~, wherein said process of creating randomized transactions is performed independently on said transactions prior to the transactions being collected in said database.

19. (Previously Presented) A computer program product on a computer-readable medium and tangibly embodying a program of instructions executable by a computer to perform a method of mining association rules from databases while maintaining privacy of individual transactions within said databases through randomization, said method comprising:

randomizing an original dataset to create a randomized dataset, said randomizing comprising:

randomly dropping true items from each transaction in said original dataset;

randomly inserting false items into each transaction in said original dataset;

collecting said randomized dataset in a database; and

mining said database to recover an association rule in said original dataset after said dropping and inserting processes, wherein said mining comprises:

determining support for said association rule in said randomized dataset;

estimating support of said association rule in said original dataset based on said support of said association rule in said randomized dataset; and

outputting said association rule if said support of said association rule in said original data set is estimated to be greater than a predetermined minimum,

wherein, due to said randomizing, privacy breaches of said individual transactions are controlled during said mining.

20. (Currently Amended) The computer program product according to claim 19, ~~all the limitations of which are incorporated herein by reference~~, wherein said randomizing comprises per transaction randomizing, such that randomizing operators are applied to each transaction independently.

21. (Currently Amended) The computer program product according to claim 19, ~~all the limitations of which are incorporated herein by reference~~, wherein said randomizing is item-invariant such that a reordering of said transactions does not affect outcome probabilities.

22. (Currently Amended) The computer program product according to claim 19, ~~all the limitations of which are incorporated herein by reference~~, wherein said dropping of said true items and said inserting of said false items are carried out to an extent such that the chance of finding a false itemset in a randomized transaction relative to the chance of finding a true itemset in said randomized transaction is above a predetermined threshold.

23. (Currently Amended) The computer program product according to claim 22, ~~all the limitations of which are incorporated herein by reference~~, wherein said predetermined threshold provides that the chance of finding a false itemset in said randomized transaction is approximately equal to the chance of finding a true itemset in said randomized transaction.

24. (Currently Amended) The computer program product according to claim 19, ~~all the limitations of which are incorporated herein by reference~~, wherein said dropping and said inserting are performed independently on said transactions prior to said transactions being collected in said database.